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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/508,684	05/31/2000	ERLAND SORENSEN	9847-0035	7904

22850 7590 03/03/2004

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EXAMINER	
WAKS, JOSEPH	
ART UNIT	**PAPER NUMBER**
2834	

DATE MAILED: 03/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/508,684	SORENSEN ET AL.	
	Examiner	Art Unit	
	Joseph Waks	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *28 December 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *28-55* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *28-55* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 May 2000* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *1002 and 0502*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings were received on December 28, 2001. These drawings are accepted by examiner.

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the rotating field circuit comprising an electric winding having an electric conductor, a first semiconducting layer surrounding and in contact with the conductor, a solid insulating layer surrounding and in contact with the first semiconducting layer and a second semiconducting layer surrounding and in contact with the solid insulating layer must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

3. The amendment filed on December 28, 2001 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: the rotating field circuit comprising an electric winding having an electric conductor, a first semiconducting layer surrounding and in contact with the conductor, a solid insulating layer surrounding and in contact with the first

semiconducting layer and a second semiconducting layer surrounding and in contact with the solid insulating layer.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. **Claims 28-49** and **55** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The feature of the rotating field circuit comprising an electric winding having an electric conductor, a first semiconducting layer surrounding and in contact with the conductor, a solid insulating layer surrounding and in contact with the first semiconducting layer and a second semiconducting layer surrounding and in contact with the solid insulating layer is a new matter that is not supported by the original specification and drawings.

6. **Claim 54** is rejected under 35 U.S.C. 102(b) as being anticipated by **Zocholl (US 4,914,386)**.

Zocholl discloses in Figures 1-8 and column 13, lines 25-34 invention as claimed: a method of measuring a voltage 32 and a current 34 in the electric field winding, providing the measurement results to a processor to calculate the rotor temperature.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. **Claims 28-32, 34-37,** and **39-41** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Nikitin (US 4,429,244)** in view of **Elton et al. (US 5,036,165)** and **Nussel (US 4,000,464)**.

Nikitin et al. disclose in Figures 1 and 2 Nikitin et al. disclose a rotating electric machine l configured to be directly connected to a distribution or transmission network (Re column 1, lines 14-29), comprising winding 5 having a multi-layer electric cable 6 with a solid insulation and corona prevention layer 24. However, **Nikitin et al.** fail to disclose the winding having a first layer with semiconducting properties in contact and surrounding the conductor, the solid insulating layer in contact and surrounding the first layer, the second layer with semiconducting properties in contact and surrounding the insulating layer, and the detecting circuit to detect an earth fault in the rotating field circuit.

Elton et al. disclose in Figure an electric cable 100 having the first layer 104 with semiconducting properties surrounding a conductor 102 and comprising a number of conductive elements in electric contact, a solid insulating layer 106 surrounding the first layer, a second layer 110 with semiconducting properties surrounding the insulating layer and connected to the earth for the purpose of prohibiting development of the corona discharge in high powered

electrical apparatus such as dynamoelectric machine (Re Abstract lines 7 and 8, and column 1, lines 15-35).

Nussel discloses in the Figure an electrical winding 14 having the detecting circuit 7-10 and an excitation system 13 configured to supply a voltage to a field circuit 15 and rotating with the field circuit and injection and measuring unit 9, 6, 8 arranged in the excitation system for the purpose of supplying the excitation current to the rotating field, detecting the fault current in the rotating field and a measuring unit 12 providing a visual indication and/or to operating a suitable protective circuit when such event occurs.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the rotating electric machine as taught by **Nikitin et al.** and to provide winding having a multi-layer electric cable as taught by **Elton et al.** for the purpose of prohibiting development of the corona discharge in the high powered electrical machine.

It would have been further obvious to one having ordinary skill in the art at the time the invention was made to design the combined machine with the electrical winding having the detecting circuit as taught by **Nussel** for the purpose supplying the excitation current to the rotating field, detecting the fault current in the rotating field and to provide a visual indication and/or to operate a suitable protective circuit when such event occurs.

Re claims 29 and 30, the combined machine that includes cable having the conductor strands in contact with the first semiconducting layer and the second semiconductor layer surrounding a circularly shaped outer perimeter of the winding cable will inherently carry the characteristics recited in the claims i.e. the potential of the first semiconducting layer similar to

the potential of the conductor and the second semiconducting layer forming the equipotential surface around the conductor.

Re claims 31 and 32, the combined machine includes the second semiconducting layer connected to earth.

Re claim 34, the combined machine includes the conductor comprising strands 104 in electrical contact with each other.

Re claims 35 and 36, **Elton et al.** refer to US 4,853,565, incorporated by reference therein, that the semiconductor layers can be molded or blown so it can be placed in intimate contact with substantially all of the exterior surface of insulator (i.e. solid insulating layer) without causing cable rigidity that include bending the windings (Re Figure 5).

9. **Claim 33** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Nikitin (US 4,429,244)** in view of **Elton et al. (US 5,036,165)** and **Nussel (US 4,000,464)** as applied to claim 28 above and further in view of **Elton et al. (US 4,622,116)**.

The combined winding discloses all elements essentially as claimed. However, it fails to disclose at least two adjacent winding layers having a substantially same coefficient of thermal expansion.

Elton et al. (US 4,622,116) disclose in Figures 1a- 2 and in column 7, lines 38-44 a winding having two adjacent layers 12 and 13 a substantially same coefficient of thermal expansion for the purpose of withstanding without failure the process of thermal aging and cycling the winding system.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the combined winding and to provide two adjacent winding layers

having a substantially same coefficient of thermal expansion as taught by **Elton et al. (US 4,622,116)** for the purpose of providing windings that may withstand without failure the process of thermal aging and cycling they are exposed to.

10. **Claim 38** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Nikitin (US 4,429,244)** in view of **Elton et al. (US 5,036,165)** and **Nussel (US 4,000,464)** as applied to claim 37 above and further in view of **Breitenbach et al. (US 4,785,438)**.

The combined winding discloses all elements essentially as claimed. However, it fails to disclose the cable comprising a sheath.

Breitenbach et al. disclose in Figure 2 a winding formed of a cable and having a sheath 10 for the purpose of providing a mechanical protection to the cable.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the machine with the sheath over the cable as taught by **Breitenbach et al.** for the purpose of providing a mechanical protection to the cable.

11. **Claims 42-54** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Nikitin (US 4,429,244)** in view of **Elton et al. (US 5,036,165)** and **Nussel (US 4,000,464)** as applied to claim 37 above and further in view of **Fiorentzis (US 4,224,652)**.

The combined winding discloses all elements essentially as claimed. However, it fails to disclose the filter circuit.

Fiorentzis discloses in Figure 2 the filter 13 for the purpose of filtering the signal to provide the useful current required for activating a suitable protection device.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the machine with the sheath over the cable as taught by **Fiorentzis**

for the purpose of providing filtering the signal to provide the useful current required for activating a suitable protection device.

Allowable Subject Matter

12. The indicated allowability of claims 40-53 is withdrawn in view of the newly discovered reference(s) to **Fiorentzis (US 4,224,652)**. Rejections based on the newly cited reference(s) are provided in this Office action above.

Response to Arguments

13. Applicant's arguments with respect to claim 28 have been considered but are moot in view of the new ground(s) of rejection.

Prior Art

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Communication

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Waks whose telephone number is (571) 272-2037. The examiner can normally be reached on Monday through Thursday 8 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Burton S Mullins can be reached on (571) 272-2029. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1850.

JOSEPH WAKS
PRIMARY PATENT EXAMINER
TC-2800

JW
February 9, 2004